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**Cc:** [Breuer, Rich@Waterboards](mailto:Breuer.Rich@Waterboards); [Denton, Debra](mailto:Denton.Debra); [Poulson, Zane@Waterboards](mailto:Poulson.Zane@Waterboards); [Morris, Melissa@Waterboards](mailto:Morris.Melissa@Waterboards)  
**Subject:** RE: EPA's withdrawal of TST procedure and use of it in our MS4 permit  
**Date:** Wednesday, June 10, 2015 10:15:52 AM  
**Attachments:** [R8 Suggested Responses for TST Letter.docx](#)  
[TST Implementation Document.pdf](#)  
[2012 Risk Sciences Letter.pdf](#)  
[2012 CASQA Comment & Response.docx](#)  
[Toxicity Testing Tool for Storm Water Dischargers.pdf](#)

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Good morning,

State Board's suggested responses to Tim Moore's recent comment letter are attached, along with other informational documents that may prove useful to you:

- TST Implementation Document
- Tim Moore's 2012 comment letter/method blank study
- CASQA's 2012 comment addressing storm water toxicity and draft staff response
- Draft Toxicity Testing Tool for Storm Water Dischargers

Feel free to contact me if either of you have any questions or would like additional documents.

Regards,

**Brian Ogg, Environmental Scientist**  
**State Water Resources Control Board**  
**Office of Information Management and Analysis**  
**Phone: (916) 322-8432**  
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**From:** Boyd, Heather@Waterboards  
**Sent:** Tuesday, June 02, 2015 4:15 PM  
**To:** Ogg, Brian@Waterboards  
**Subject:** RE: EPA's withdrawal of TST procedure and use of it in our MS4 permit

Hi Brian,

Thanks. I guess they are worried about controversies with the TST method that the stakeholder brings up. See issues below. I'm sure these were also raised during the TST development. If there are responses that are in the record that speak to the issues below, please point them out to me. If you'd like to discuss over the phone, I won't be available until Monday, the 8th.

Issues raised:

1) There were several substantive challenges raised against the TST in a concurrent court proceeding. However, the court ruled that these challenges were "moot" when EPA withdrew the ATP approval for the TST. The court saw no need to rule on the substantive merits of the TST if it was no longer an approved ATP. It is true that EPA withdrew the ATP for reasons unrelated to the substantive challenges that were being raised. However, the Memo seems to imply that there were no such challenges raised which is patently untrue. These challenges are still pending as part of formal appeals filed against other NPDES permits in which the LA and San Diego Regional Boards elected to continue requiring use of the TST.

2) The TST is not an EPA-approved 136 method. SWRCB seems to claim that the word "method" applies only to how a test is conducted in the laboratory and not to the statistics used to analyze the resulting data. This is one of the key issues being challenged and litigated. EPA has repeatedly stated that WET testing is a "Method-Defined Parameter." And, federal regulations do not allow Alternate Test Protocols for method-defined parameters. Moreover, an ATP is only approved where it can be shown that the alternate procedure produces results that are functionally-equivalent to those produced by a standard 136 method. The TST procedure produces results that are diametrically opposed to those recorded using the current 136 methods (NOEC or IC25). This creates a real serious problem when it comes to certifying compliance status on a DMR.

3) When the TST method is used to reanalyze *Ceriodaphnia dubia* reproduction data from EPA's Interlaboratory WET Variability Study, 15% of the blank (non-toxic) samples were declared to be toxic. This is nearly 4-times higher than the number of false positive reported using the approved NOEC or IC25 procedures.

4) One reason that the false positives were relatively low in the Interlab WET Variability Study is that EPA used data from the multiple concentration series to identify probably Type-1 statistical errors by confirming the presence or absence of a valid dose-response relationship. This very useful procedure is not available if a test is performed on only two concentrations (a control and a 100% receiving water sample). Although EPA allows the use of simple 2-concentration screening tests in receiving water, they continue to recommend multiple concentration tests as the preferred approach because the latter provides an opportunity to inspect the data for a valid dose-response relationship. The Memo seems to imply that such "interpretation" is a bad thing. However, EPA guidance repeatedly states that a valid dose-response is the very foundation of toxicity testing. .

5) The TST procedure is not cheaper. The memo suggests that costs are reduced because the test requires only two concentrations. However, in order to reduce the risk of false positives to a level no greater than that expected from the current NOEC or IC25 methods, it is necessary to double or triple the number of replicates in the 2-concentration TST procedure. Thus, the final cost ends up being about the same. And, if the discharger and lab elect to use fewer replicates, than the cost of additional accelerated monitoring caused by false positives more than offsets any initial cost savings. San Bernardino filed extensive detailed proof of this in their comments to the SWRCB on the proposed TST method.

6) The most egregious claim in the memo is that the TST produces a "definitive result" while the NOEC and IC25 require "interpretation." That is blatantly false. The TST approach starts by specifying a Regulatory Management Decision (RMD) threshold. In California the RMD is 25%. That is, a sample should be considered toxic if it produces 25% less reproduction or growth than the control group. On its face, it sounds a lot like the IC25. However, the statistical null hypothesis presumes that organisms exposed to the effluent sample WILL produce 25% fewer offspring or will weigh 25% less. And, the discharger must prove to a statistical certainty that any observed difference is smaller than a 25% difference compared to controls. The problem occurs when effluent-exposed organisms weigh 17% less than the control group or produce 18% fewer offspring. The TST will frequently call such results a FAILURE because we are not statistically certain that the

difference might not have been 25%. In other words, 18% is so close to 25% that, given the level of variability present, we are not sure they are really different from one another. Bottom line: we are interpreting a nominal difference of far less than 25% to be indistinguishable from 25%. And, these are precisely that sort of tests that would absolutely pass using the IC25 method and would usually pass the NOEC method about half the time. This will result in a great deal of controversy when the two EPA-approved methods say that a sample is not-toxic and the new unapproved TST method says the same sample is toxic.

Until all this gets sorted out in litigation, the safest thing to do is to continue requiring dischargers to perform WET tests using 136-approved methods and in accordance with the manuals and guidance documents that EPA cited when the WET test methods were promulgated in 2002. If you want to see the TST results also, there is nothing that precludes you from requiring dischargers to Monitor and Report the TST values along with the traditional NOEC and IC25 values. But, only the latter will be used to assess NPDES compliance.

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**From:** Ogg, Brian@Waterboards  
**Sent:** Tuesday, June 02, 2015 2:40 PM  
**To:** Boyd, Heather@Waterboards  
**Cc:** Morris, Melissa@Waterboards  
**Subject:** RE: EPA's withdrawal of TST procedure and use of it in our MS4 permit

Heather,

The ATP request letter - and its subsequent withdrawal - only addressed the use of two concentrations (i.e. sample + control) when conducting a TST analysis; not the use of the TST itself (see attached). However, the requirement to utilize five-concentration toxicity tests only applies to wastewater discharges, not storm water.

Feel free to send the stakeholder's questions to me; chances are I've heard them before!

Best regards,

Brian Ogg, Environmental Scientist  
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Phone: (916) 322-8432  
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**From:** Boyd, Heather@Waterboards  
**Sent:** Tuesday, June 02, 2015 2:02 PM  
**To:** Ogg, Brian@Waterboards  
**Cc:** Morris, Melissa@Waterboards  
**Subject:** EPA's withdrawl of TST procedure and use of it in our MS4 permit

Hi Brian,

I have a question about the TST and EPA's withdrawal of CA's use of this test from one of our managers. We specified this test in our MS4 permit according to a memo that allows this sent by Rich Breuer to the DMC. One of our stakeholders has raised some issues with the state still endorsing the use of this test. I am not familiar with toxicity and was hoping that you could provide some insight into the stakeholder's issues? If so, I can forward you the questions and maybe after reading, we can talk the issues over with our manager.

Thanks,  
Heather

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